

Applicant : Rudolf NEUMANN  
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REMARKS

Claims 1 and 9 have been amended. Claims 1-14 remain pending in the application. Applicant submits that the amendments of claims 1 and 9 raise no issues of new matter and are fully supported by the specification as filed. Applicant respectfully requests that this Amendment be entered.

The Examiner objected to the drawings for allegedly failing to comply with 37 C.F.R. § 1.21(d) because FIGS. 1 and 2a-2c are not clearly shown. Applicant has submitted replacement drawings prepared by a competent patent draftsman that clearly show the contents of FIGS. 1 and 2a-2c. Accordingly, Applicant respectfully requests withdrawal of the Examiner's objection.

The Examiner rejected claims 1-8 and 11-14 under 35 U.S.C. § 102(b) as being unpatentable over Hu (Optimum Operation Condition of an Ultrasonic Motor Driving Fluid Directly, Journal of Applied Physics, vol 35, pp 3289-3294, May 1996), hereinafter "Hu.". The Examiner asserts that this reference teaches all of the claim elements.

Applicant maintains that claims 1-8 and 11-14 are patentable over Hu. Hu discloses an ultrasonic motor comprising

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a piezoelectric ring that drives a rubber rotor by way of a fluid drive medium (Hu. P. 3289, Col. 1, lines 1-3, 12-14; Col. 2, lines 1-2; FIG. 2). However, unlike the present invention, Hu does not disclose the use of a hydrodynamic bearing system arranged between the rotor and the stator. As can be seen in FIG. 1 of Hu, the rotor contains large paddles that translate the rotational movement of the drive fluid into rotational movement of the rotor. However, these large paddles do not contain the groove patterns, such as those found in the present invention, that are needed to form hydrodynamic pressure to maintain a hydrodynamic bearing. The configuration of the present invention is advantageous because it provides, inter alia, a way to reduce the size of the motor because the gap (4') between the drive element (8) and the thrust plate (5) also forms part of the hydrodynamic bearing system. Moreover, the fluid drive medium used to power the motor is also used as the lubricant for the hydrodynamic bearing system (Para [0018]; FIGS. 1, 5). The features of the present invention are not found in the teachings of Hu.

Claims 1 and 9 have been amended to positively recite that the hydrodynamic bearing comprises a grooved pattern on its bearing surfaces for building up a hydrodynamic pressure within the bearing gap when the rotor is rotated. In view of the

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amendment, Applicant submits that independent claim 1 defines patentable subject matter over Hu. Claims 2-8 depend from claim 1 and are also submitted to define patentable subject matter at least for the reasons set forth above. Likewise, claims 11-14 depend from claim 9, which has been amended in the same manner as claim 1, and which the Examiner did not object to over Hu, and are also submitted to define patentable subject matter at least for the reasons set forth above. Reconsideration and withdrawal of these rejections is respectfully requested.

The Examiner rejected claims 9 and 10 under 35 U.S.C. § 103(a) as being unpatentable over Hu in view of Shibata (Japanese Patent No. 64-008879), hereinafter "Shibata".

As discussed above, independent claim 9 defines patentable subject matter over Hu. Claim 10 depends from claim 9 and is also submitted to define patentable subject matter over Hu at least for the reasons set forth above.

Like Hu, Shibata discloses an ultrasonic motor wherein piezoelectric elements produce a traveling wave in a fluid drive medium (7) which in turn contacts with blades (5b) attached to a rotary member (5) so as to rotate the rotary member (Shibata, Abstract; FIG. 1). However, unlike the present invention, Shibata fails to disclose a hydrodynamic bearing, let alone a

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hydrodynamic bearing that uses the fluid drive medium concurrently as a lubricant for the hydrodynamic bearing. Moreover, the arrangement of Hu, which uses blades (5a) to translate the motion of the fluid drive medium into rotation of the rotor (5), does not contain the groove patterns found in the present invention which create hydrodynamic pressure in the bearing gap. The arrangement of Hu would not allow the gap between the piezoelectric drive element and the stator to also serve as a hydrodynamic bearing because the blades (5a) are not suitable for creating hydrodynamic pressure. Thus, Hu and Shibata together fail to teach this feature of the present invention as described in claim 9.

Claim 9 has been amended to positively recite that the hydrodynamic bearing comprises a grooved pattern on its bearing surfaces for building up a hydrodynamic pressure within the bearing gap when the rotor is rotated. In view of the amendment, Applicant submits that independent claim 9 defines patentable subject matter over Hu in view of Shibata. Claim 10 depends from claim 9 and is also submitted to define patentable subject matter at least for the reasons set forth above. Reconsideration and withdrawal of this rejection is respectfully requested.

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In summary, Applicant submits that it has addressed and overcome all of the objections and rejections stated in the Office Action, and that the application now is in condition for allowance. Applicant requests notice to this effect at the Examiner's earliest convenience.

Applicant, through the undersigned attorney, hereby petitions the Commissioner of Patents to extend the time for responding to the Office Action dated July 11, 2008 for one month from October 11, 2008 to November 11, 2008.

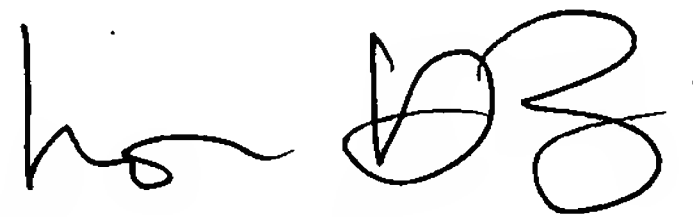
Submitted herewith is a check for \$130.00 to cover the cost of this extension.

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No fee other than the \$130 extension of time fee is believed to be required in connection with the filing of this Communication. However, the Commissioner is hereby authorized to charge any fees required in connection with the filing of this Communication to Deposit Account No. 03-3125.

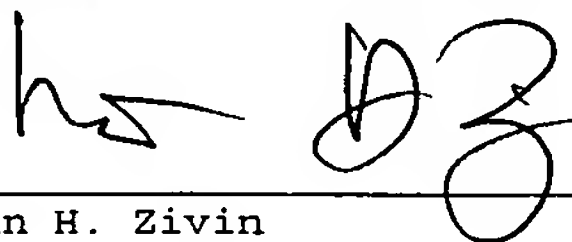
Respectfully submitted,

Dated: November 7, 2008



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11/7/08

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Date